AMENDMENTS

IN THE CLAIMS:

Claims 1-4 (Cancel)

5. (Previously presented) A method of controlling a system including a processor for applying actor-critic based fuzzy reinforcement learning to perform power control in a wireless transmitter, comprising the acts of:

mapping input data to output commands for modifying a system state according to fuzzy-logic rules;

using continuous, reinforcement learning, updating the fuzzy-logic rules based on effects on the system state of the output commands mapped from the input data; and

converging at least one parameter of the system state towards at least approximately an optimum value following multiple mapping and updating iterations.

6. (Previously presented) The method of claim 5, wherein updating includes taking a derivative with respect to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered.

7. (Previously presented) The method of claim 6, wherein updating includes updating the at least one parameter based on said derivative.

Claims 8-12 (Cancel)

13. (Previously presented) A computer-readable medium containing instructions which, when executed by a computer, control a system for applying actor-critic based fuzzy reinforcement learning, by:

maintaining a database of fuzzy-logic rules for mapping input data to output commands for modifying a system state by using continuous, reinforcement learning to update the fuzzy-logic rules database based on effects on the system state of the output commands to control a wireless transmitter, the output commands mapped from the input data; and

converging at least one parameter of the system state towards at least approximately an optimum value following multiple mapping and updating iterations.

14. (Currently amended) The computer-readable medium of claim 13, wherein updating the fuzzy-logic database comprises [utilizing]taking a derivative with respect to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered.

15. (Currently amended) The computer-readable medium of claim 14, wherein the at least one parameter is updated [utilizing]by taking the derivative with respect to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered.

Claims 16-17 (Cancel)

18. (Currently amended) A system controlled by actor-critic based fuzzy reinforcement learning, comprising:

a processor;

at least one system component whose actions are controlled by the processor; and

instructions, which, when executed by the processor:

maintain a database of fuzzy-logic rules for mapping input data to output commands for modifying a system state by using continuous, reinforcement learning to update the fuzzy-logic rules database based on effects on the system state of the output commands mapped from the input data, wherein updating the fuzzy-logic database comprises taking a derivative with respect

to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered; and

converge at least one parameter of the system state towards at least approximately an optimum value following multiple mapping and updating iterations [The system of claim 18,] wherein updating the fuzzy-logic database comprises [utilizing]taking a derivative with respect to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered.

19. (Currently amended) The system of claim 18, wherein the at least one parameter is updated [utilizing]by taking the derivative with respect to said at least one parameter of a logarithm of a probability function for taking a selected action when a selected state is encountered.

20. (Currently amended) The system of any of claims [17]18-19, wherein the system state comprises system state of a wireless transmitter.